Obituary Notice of Professor Susumu TOMOTIKA

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Late Professor Susumu Tomotika

Professor Susumu Tomotika, a fellow of the Disaster Prevention Research Institute, professor of physics in the University of Kyoto, passed away on December 9th, 1964, in his sixty-first year. By his death we have lost one of the most distinguished leaders in fluid mechanics and also in this institute in particular.

Born on April 11th, 1903, at Matsuyama, Ehime Prefecture, Professor Tomotika graduated the course of physics in the Faculty of Science, the Tokyo Imperial University in 1926. Immediately he was appointed an assistant in the same university and in 1929 he was promoted to an assistant professor. In 1932 he took the degree of D. Sc. at the Tokyo Imperial University and in 1933 he moved to the Osaka Imperial University. Since 1934 to 1936 he visited England, Germany and Italy as an overseas scholar of the Ministry of Education, and he stayed in Cambridge for fourteen months and engaged in research of fluid mechanics under the guidance of Professor G. I. Taylor (Sir Geoffrey Taylor). On coming home he was promoted to a professor of the Osaka Imperial University and in 1943 he moved to the Kyoto Imperial University (the University of Kyoto), which position he held up to the time of his decease. Since 1953 he has been a fellow of the Disaster Prevention Research Institute.

The research activity of Professor Tomotika covers almost all branches of modern fluid mechanics and also the related subjects such as the theory of elasticity and acoustics. In the earlier stage of his research career he was interested in aerodynamics and a great deal of works was done by himself and his younger colleagues under his guidance on the wall effect of the flows of an incompressible perfect fluid. These works resulted in various important practical applications relating to the ground-effect of the aeroplane performance and the similar problem of the model plane in the wind tunnel.

During his stay in Cambridge Professor Tomotika participated in joint work on turbulence guided by Professor Taylor, whose unique personality and unparalleled originality in work gave him deep and everlasting influence. In this period his work was mostly concerned with the dynamics of viscous fluid, in particular, the laminar boundary layer, the hydrodynamical stability, and the generation and structure of turbulent flow.

The progress in the aircraft engineering stimulated the construction of the high-speed aerodynamics, and Professor Tomotika was one of the earliest

workers on the flows of compressible fluid. Among many works carried out in his laboratory we should mention his joint work with Professor K. Tamada on the transonic flow, which is an unique achievement under the severe condition of this country just after the war and was highly appreciated by scholars abroard.

The latest stage of research work of Professor Tomotika roughly coincides with the period in which he has been a fellow of this institute. In this stage his interest was concerned with geophysical problems in fluid mechanics. The works carried out under his directional influence in this institute and elsewhere covers the following wide spectrum of subjects: flows in porous media, boundary layer in density flows, thermal convection in various flows, micro and macro phenomena in meteorology, the theory of turbulence, and magneto-fluid dynamics in general.

The administrative activity of Professor Tomotika is by no means less eminent than academic one. Within the university, he was nominated three times a member of the University Council (1952-4, 1959-61, 1962-4), served as the dean of the Faculty of Science (1959-61), and appointed concurrently a member of various institutions in the university. Out of the university, he was elected a member of the Japan Science Council (1951-4), the director of the Physical Society of Japan (1958-9), the chairman of the Committee for Mechanical Research in the Science Council (1961—), a delegate to the International Union of Theoretical and Applied Mechanics (1963), and a member of the Organizing Committee of the International Congress of Applied Mechanics (1963—).

In recognition of his outstanding contributions to science, a Second Order of Merit was conferred on him on December 9th, 1964.

He is survived by his wife and two sons.

(T. Tatsumi)